

## ONE OF LIFE'S NECESSITIES

## Shirley Dare Tells of Water, Clear and

**She Urges that It Be Boiled and Filtered—Dis-  
ease Will Come to Those Who Scoff at Chemist  
and Physician—Ice No Longer King.**

Written for the Sunday Journal.

Pure water and pure air are the first necessities of life, and must be obtained if a fine development is desired. Fresh air, pure water, bathing, hygienic diet and self-control contain the fundamental principles of true religion.

The State boards of health and eminent professors in medical colleges are making a close study of the relation of water to disease and the best modes of securing the purity of drinking-water. It is well established on the best medical authority that thirty thousand people die in the United

States yearly from typhoid fever, of which the majority of cases are communicated through drinking-water. Other diseased directly caused by impure water are colic, dysentery, pneumonia, dysentery, liver and skin diseases, dyspepsia and general debility.

Most of the water used falls short of purity and safety. That from streams and lakes must carry the wash of shores and surrounding lands, and is therefore not sufficient to make it positively unpleasant, always, but quite enough to furnish the germs of dangerous ailments and the fer-

the killing medium for these to develop in. The ravages of cancer and mysterious tumors are owing to impure water and food is partially comprehended. It is certain that the water of the world is so impure that it would be nearly impossible. The water comes from tanks and cisterns can only be kept pure by the use of chemicals. The water is so bad to use as it leaves the faucet. The water, silty lining of water-pipes, deposits from the water standing in them, not to mention the living, microscopic animals—but produce them. In the language of the laboratory workers, it is a "pure" culture, in which they breed and multiply. The water which deposits a slimy coating on pails and pitchforks by standing is safe for drinking or cooking. The thermometer and as frequently referred to it would not be necessary to demonstrate the necessity of pure water. No one could see the horror forms with which it awakens, in their malignant shapes types of the evil they are made of. It is well they are hid from our eyes, or existence would be organized nightmare. But these malignant products are not to be feared. It is necessary to lay aside other considerations to learn how to preserve ourselves from them.

Experiments testing the purity of drinking water have been made. The water has been analyzed, the first chemists and phy-

sciences here and abroad, and will be found in the *Annals of the Entomological Society of America*. Town libraries and doctors should provide themselves with the reports of Professor Ansell, of Derry, N. H., to the State Board of Health, of Mr. Frankland, to the Royal Sanitary Commission, and of Dr. Charles Currier on his experiments with drinking water in the laboratories of Berlin and the Carnegie Laboratory of New York city. The reports of these men are of the value of more public benefit or more credit to the community than the reports of any other many-million man whose name it bears, than the new and well-equipped laboratory of the University of California, or the neighbors Bellevue Hospital and Medical School. Dr. Currier enumerates the most distressful scourges among diseases caused by drinking water, and the means of their prevention after season, to which cause is traced such "inexorable epidemics" as the recent outbreak of typhoid fever at Cambridgeport, Mass., and of typhoid fever at Cumberland, N. H., in the future.

that it is in general safer to consume water and milk like other foods—after cooking them. Even water charged, with carbon dioxide gas, is not objectionable, and is rightly regarded as preferable for purity to ordinary water, allows certain kinds of bacteria to increase in water, and in soda water, usually to the extent of one hundred pounds to the square inch. As original bacteria perish more rapidly, in soda waters when charged than in simple water this affords a resource in case the people are afflicted with cholera, or during sickly seasons. A small addition of alcohol or spirits also prevents injurious results from bad water, but cannot always be depended upon. Water charged with carbon dioxide in stronger proportion than is pleasant to most tastes.

Boiling most effectually destroys the germs of heat in water. The following has been said in medical journals that fifteen minutes' boiling was enough to purify even infected water. Doubtful of this fact, Dr. Currier made an experiment, and found that water in a "barometer"

to remove sediment and yet have the harmful microorganisms, the bacteria, the harmful fungi, the germs, remain in the water, it was not possible to find a method of purifying the water so sorbent cotton. This proves at once the necessity of supposing that small plug filters are not made of a fastidious material, but of a material which is a purifying water, or that ordinary layers of cotton batting will keep fermenting germs out of preserved fruit. No hastening or retarding of the process of purifying and keeping of food or water. It is demonstrated that water may be entirely clear and yet contain germs which are living and active and other putrid diseases. Bacteria destroys this microscopic life. The cause of tubercular disease—that is, consumption—is a bacillus, a germ, which is a rod-shaped typhoid bacilli and the pus-producing kinds are harmless when the water has been allowed to cool slowly. Cholera germs are still more sensitive.

Dr. Currier concludes that water whose temperature becomes harmless when it is boiled ten minutes. From many tests he thinks the bacteria of ordinary clear hy-

though the Berlin Professor Koch disagreed with this opinion. Dr. Carnegie added purifying solutions of meat, vegetable and mineral salts to the water, and found, after straining them, that the bacteria rarely resisted twenty minutes boiling. The bacteria were kept alive from forty-five to sixty minutes while boiling.

In the experiments at the Carnegie laboratory the water was strained and decanted into flasks plugged with cotton, lowered with a thread round the necks into a steamer sterilizer, which, by the combined use of steam and water, was kept at a temperature kept at its highest heat, 155 degrees centigrade. The flasks were steadily heated for twenty minutes and the water was withdrawn at intervals, leaving the longest it 103 minutes. By test it was found that living bacilli resisted boiling up to seventy minutes. The flasks were allowed to cool gradually, then samples were tested after one, seven, and thirty minutes. The results showed that so long in the warm laboratory that the bacteria lost their vitality before it cooled, even in the flasks steamed thirty-seven minutes. The bacteria, when they multiplied greatly, but none were found in the boiled water, and solutions of the bacteria after a few days were completely free from animal germ, though other chances took place.

In the stomach and intestines these bacteria

enormously, giving off great amounts of foul gases and other noxious products. Raising clear water, containing the micro-organisms of typhoid, cholera, dysentery or of pus disease to the boiling point and allowing it slowly to cool destroys their germs. In case of surgical operations or wounds it is of the first necessity to have water absolutely free from all germs, as the best means to produce this is by boiling. Passages in Hippocrates and Galen show that the ancient Greeks valued pure boiled water, and also that to which salt was added and boiled, for cleansing of wounds and surgery.

It is interesting, says Dr. Currier, to find a typically skillful modern surgeon. For

Accepted as gospel good and true. The recollection is still vivid to nearly everybody of intelligence of scores of public men in both parties dying in Washington—Justices of the Supreme Court, members of Congress, occupants of other places, and dying so poor that friendship had to come in and pay their funeral expenses, and to keep their

Political parties are no more selfish than politicians. Where the public pays for the politicians, the public officer, political parties, and the men making political parties, spend \$10 by way of increasing public intelligence. They do this by way of having the most honest discussion of current events, by way of extending the circulation of newspapers and magazines, by way of increasing the reach and knowledge of every voter the right side of the argument. If a political party be called a co-operative vote-buying machine, it is no more selfish than the country it serves. It is not much danger from it when it spends \$10 for the public good, where the selfishness of the politician is \$100. I say that politics is a generous thing, not an ungenerous and selfish. I say that politics is a manly thing, not a manipulative thing. It is a broad thing, not a narrow thing. It is a good and nobleship rather than narrowness and selfishness and meanness. The very friendship of politics that is growing in this country is the best thing in the friendship of good men for others will never understand this Republic. There may be other friendships, but this is the best thing in the friendship is the best thing in this, and we have to get along in this world until we get to the other. There is a good deal of selfishness in this world, but so there is in everything else in human life. Men in politics make mistakes, but so did men in other things, and so there is in this world. So I hope will many of the people in this world who have made mistakes. It

all hope. We do not turn to the perfect poets; we go to good old Peter for our help. When he fell down in weakness and in the hour of his death, he said to all of us who are human. All the men in politics are not Saint Johns. Many of them are Saint Peters. They are serving their country, but they are not doing it as well as I. I would rather send my boys into politics to learn manliness, self-sacrifice and generosity, the honor of personal effort, than to let them go into politics. I am generous, than in any other school in practical life that I know. The church, of course, is the best school for politics; none of the professions are any better.

The good heart of politics ought to be encouraged. Political warfare has made our country a stronger and stronger. The good heart of President Lincoln in the last year has been shown in thousands of occasions made for the sake of humanity, for the sake of the world, for the sake of our country more than party. So with nearly every other public officer having decisions in politics or public life to make. A government is not a party. It is a government to be loved. This government has always had a heart. It remembered and put in office as long as they lived, in every generation, the best men of the country. In the year of 1812, of the war with Mexico and of the great war for the Union, the country could not find a better man to save if it did not remember its sinners. One of the cruelties of public life is that civil-service reform in law and in public policy has been put into a war-warrior, veteran away from his home. There are dozens of places under him killed by men able-bodied, who never served in the army, but who were put in place by a man who helped to save his nation could

As well and more faithfully. Any civil-service law that makes a government appointment a life tenure is a bad law. There is no good law in a Christian land.

Very beautiful and good is friendship. This world is nothing without it. A few years ago, a man came to the Supreme Court to work. A justice of the Supreme Court of the United States, a man of seventy-two or three years old, who is growing footsore with his weight—many years, came into the room. He surprised me. I said, "Judge, what is your errand so late in the day?" He answered: "I have an errand to the friends, who are ill and who are not able to attend to it for themselves. He is anxious about a small postoffice in New Mexico, where a friend and comrade of his is a candidate. He has been a long time in the place and has come in his place." I told him that what he asked should be done, and said: "Judge, how long are you at your age going to stay in the place?"

about the departments every week, climbing long stairs, and using your valuable time, or when you should be at leisure, in performing such duties." He replied: "As long as I live, that is what I am in this world for, and when I die I ask that nothing better be placed in record than above my name. I was faithful to my friends." This gospel of faithfulness in human friendship from the lips of a man who is in my judgment the greatest American living today, in all the elements of greatness, goodness, honesty, and nobility. There is much in politics, of course, that is bad, fatious and unworthy. But there is very much more that is splendid and good.

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CUSTER'S LAST BATTLE.

The Well-Known Military Man's Theory of the Fight—Sitting Bull Was Not Present.

Near Charles King, in August Harper  
 never realizing, as I believe, the fearful  
 odds against him, believing that he would  
 lead the village "on the run," and that be-  
 hind himself and Reno he could "double  
 them up" in short order, Custer had jauntily  
 trotted down to his death. It was a long  
 five-mile ride from where he sighted the  
 northern end of the village to where he  
 struck its center around that bold point of  
 bluff, and from the start to the moment  
 his gaudies whirled into view, and his  
 troopers came galloping "front into line."  
 I was not there, but I can fairly say  
 that the great village—never daunted by  
 depth and extent. Rounding the bluff, he  
 suddenly found himself face to face with  
 thousands of the boldest and most  
 courageous warriors of the West. He  
 hoped to charge at once into the heart  
 of the village, to hear the cheers of  
 his warriors, to see the women and  
 children, to be greeted with a perfect fury of flame  
 and hissing lead from the dense thickets of  
 willows and cedars that lined the river.  
 Instead he was answered at once. Quickly

mounted his men threw them forward on the run, each fourth man holding, cavalry fashion, the horses of the other three. The line seems to have swept in parallel very nearly with the general course of the stream, but to no purpose. The foe was even to one in their front. Boys and squaws were shooting from the willows (Oh, we had plenty guns," said our story-tellers) and under worse than that, hundreds of young men had been mounded up in the timber, and swarmed across the stream behind him. Hundreds more were following and circling all about him. And then it was that Custis met the hero of a hundred daring charges.

seems to have realized that he must  
seem his way out. "Mount!" rang the trum-  
pet, and the men leaped down from  
the ground, the troopers ran for  
horses. Instantly from lodge and willow  
Agalalas and Brules sprang to horse and  
rushed to the ford in mad pursuit. "Make  
for the west!" cried the Indians, and  
for the first rush was eastward; then more  
to the left as they found their progress  
barred. Then, as they reached higher  
ground, they saw that the Indians could  
see, circling, swooping, yelling like  
demons, and all the time keeping up their  
warriors fire, thousands of the mounted  
troopers leaped out of the brush and  
from their saddles. Casters men  
saw that retreat was impossible.  
They sprang to the ground, "Turned their  
backs to the Indians, and in the  
that time half their number had fallen. A

skirmish line was thrown out down the  
slope, and there they dropped at five yards' distance, and lay there for some twenty  
two days after. Every instant the foe rode  
closer and gained in numbers; every instant  
some poor fellow bit the dust. At last, on  
a mound that stands at the northern end of  
the little ridge, Custer, "Wild Cat" Yates,  
and gallant "Brother Tom," and some  
dozen soldiers, all that were left by this  
time, gathered in the last rally. They sold  
their lives dearly. Brave fellows that they  
were, they were killed. The last survivors  
leaves of the forest at the end of twenty  
minutes, and in less than twenty-five—all  
was over.

Sitting Bull was not the inspiration of

**OF LIFE'S NECESSITIES**

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**Dare Tells of Water, Clear and  
Bubbling, Hiding Ills and Death.**

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**Proves that It Be Boiled and Filtered—Dis-  
till Will Come to Those Who Scoff at Chemist  
and Physician—Ice No Longer King.**

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**H. F. Frick**  
water  
solution  
boiling  
corrosion  
used for  
operation  
antiseptic  
considered  
if boiled  
But  
water  
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boiled  
is little  
micro-  
best,  
makes

water and pure air are the first necessities of life, and must be obtained if a development is desired. Fresh air, water, bathing, hygienic diet and control contain the fundamental principles of true religion.

State boards of health and eminent persons in medical colleges are making study of the relation of water to disease the best modes of securing the use of drinking-water. It is well estab-

the best medical authority that the most common cause of disease among the thousands people die in the United States yearly from typhoid fever, of which disease there are 100,000 cases, is drinking water. Other diseases caused by impure water are colic, dysentery, cholera, sore throat, constipation, gastric pneumonia, dysentery, liver and skin diseases, dyspepsia and general debility. The use of the water used falls short of purifying and safety. That from streams and rivers must carry the wash of shores and the refuse of vegetable and animal matter, and is not so pure as to make it positively unpleasant to drink. The use of impure water is the cause of dangerous ailments and the fermenting medium for those to develop in the warmest form. How far the fearful disease of typhoid fever is caused by drinking impure water and food is paralleled by impure water and food is paralleled and comprehended. It is certain that impure blood and nourishment may be the cause of the most dangerous diseases. Cisterns and cisterns can only be kept

and safe by constant care, and is seldom a source of trouble. The only slimy lining of water-pipes, deposited in the water standing in them, not contains organic matter—that is, life. It is a mere deposit of lime.

In the language of the laboratory, the vehicle for their culture, in which they grow, is called a "petri dish." It is a slimy coating on glass or plastic, and is safe for drinking and cooking. Under the microscope as common as the air, it is a slimy coating on glass or plastic, and is safe for drinking and cooking. Under the microscope as common as the air, it is a slimy coating on glass or plastic, and is safe for drinking and cooking. Under the microscope as common as the air, it is a slimy coating on glass or plastic, and is safe for drinking and cooking.

to preserve ourselves from them. Experiments testing the purity of drinking water have been made in all countries occupied the first chemists and physicians here and abroad, and will be found of valuable and instructive result. It agrees with the reports of Professor Derry, N. H., to the State Board of Health, that the water of London, Paris, or any of England, and Dr. Charles C. Derry on his experiments with drinking water in the laboratories of Berlin and London, has been found to be of no value, probably no result of his great wealth is for the public benefit or more credit to the million man whose name it bears than to the chemist who has made the experiments relating to health which the Bellevue Hospital and Medical College of New York have made. The successful scourges among diseases caused by impure drinking water seen

The truth is gradually gaining currency generally as to the necessity of consuming milk like other foods—after cooking. Even water charged with carbonic gas and sulphur, usually thought of as a beverage, is found to be ordinary water, allows certain of bacteria to increase in water over a hundred pounds to the square inch. The original bacteria perish more rapidly in a waters when charged than in similar water when not charged. The natural supply for drinking is inferior in some seasons. A small addition of alcohol would also prevent injurious results and on to destroy germs of disease unless more proportion than is pleasant to drinking most effectually destroys the

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recular disease," that is, consumption killed by ten minutes' boiling. The results were that the pus-producing bacteria are harmless when they are brought to the boiling point and allowed to cool slowly. Cholera germs are also destroyed.

Carrier concludes that water whose temperature is suspected becomes harmless when it has been boiled for ten minutes. He says that even if the water is destroyed in this time, it is the Berlin Professor Koch disagrees with him. He says that the bacteria which cause cholera would still be able to produce their deadly effects after being subjected to such boiling, though one tough variety may die at forty-five to sixty minutes' boiling.

The experiments at the Carnegie laboratory showed that water was strained and decanted into flasks plugged with cotton, lowered into a tank of water, and

burner and a large Bunsen burner, was at its highest heat, 135 degrees centigrade, for 15 minutes, combined with a 100-watt incandescent burner, and a large Bunsen burner, was at its highest heat, 135 degrees centigrade, for 15 minutes, and single ones within 10 intervals, leaving the longest in between. It was found that livestock killed by repeated boiling, in 15 minutes, when none were found alive, gradually were allowed to cool gradually, and the water was changed every 10 to 15 days. The water retained its heat during the warm laboratory that the bacteria lost their vitality before it cooled, and the water was changed every 10 to 15 days. In a sample of the original water multiplied greatly, but none were found. The water was kept a year, closely corked, completely free from animal germs, though other chances took place. The water was kept a year, closely corked, these bacteria in drinking water increase continuously, giving off great amounts of

ing clear water, containing the micro-organisms of typhoid, cholera, diphtheria and the boiling point and allowing it slowly to cool destroys these germs. In case of surgical operations or wounds it is of the first necessity to have the hands absolutely free from all germs, as the may produce fatal inflammation. Hippocrates and Galien also used salt water. The ancient Greeks valued pure boiled water, and also that to which salt was added, and it was boiled, for cleansing of wounds surgery.

It is interesting, says Dr. Currier, to find the most skillful modern surgeon, Prof.

ny. Why should it be when s  
at the foot of Fourteenth  
York, turns out ice-machines  
able of making seven tons of  
any winter! The ice-machin  
would be an ideal cooling  
But machine or no machine,  
citizen may be independent of  
by simple experience. The  
from the experience and practice  
arts of the globe, who cool  
in the natural way by evapora-  
-rent of air. A housekeeper,  
to be bothered with the can-  
ce-box in addition to her other  
water and food cool all one hot  
this method. The housewife  
ports, soaked them over night  
all the clay was saturated,  
ars of butter and other  
ans of water on a broad  
to the kitchen window and cov-  
with an inverted flower-pot,

water flannel over the whole. In  
window, with the breeze constantly  
blowing, the pans, the food kept in a good  
condition than it did on the ice.  
The water in the pans was  
it is from a stagnant ice-box.  
was like fresh well water.  
grumbled about the lack of  
beaten up with raw eggs  
which I advise anybody to try  
ener at the idea. Beane  
beaten up with raw eggs  
or without and chilled, vies with  
no any discriminating taste, and  
beaten with cream and gelatine  
and just to the freezing point,  
as of flavor which is lost in  
straight. Try this before you  
will hardly get back to the  
stirring the freezer for ice-  
tame flavors of confectioners'  
rescue method of keeping water

ntered and aerated is in the  
 or Moorish water-cooler of burnt  
 red brick or ceramic with slender  
 by vine tendrils and leafage,  
 blue or crimson cords in the  
 rent. The water soaks the cov-  
 er, so that it is the source of such  
 lively devotion, surpassing raw  
 Lachryma Christi, excels last  
 it soothes the throat and  
 the throat and the internal or-  
 gans, in fact, medicinally, healing  
 intestinal disorders, promoting  
 humor and healthy digestion.  
 More than half the ugliness  
 nature comes from internal  
 engorgement and overly healthy  
 cond, air or drink, tends to bless-  
 edness, when we  
 see the curse remove  
 ed, physical nature.  
 mean to say," asks some good  
 person, "that these people who  
 like all this fuss and trouble to

and, and boil it, and hiter it, and  
and forth, and forth, and forth,  
Or, madam, there are plenty  
one intelligent woman who lived  
the best circles in Europe for  
circumventing her old mother, and  
she always prepared the  
water and then corked it in bot-  
tles, which she always took to her  
sawage, which she always took to  
is tracking ice, and using it, and  
others when busy, an interruption  
feel very willing to make. The  
she always pleasantly con-  
literature, and the boiling and  
and all be done the day before.  
plain New England families are  
to prepare dishes, and in  
with the reward that, other  
ing equal, childish ailments are  
the babies kept on stirred milk  
are proof against cholera in-  
minor maladies, if they can  
only pure air to breathe in addi-  
tion to being fed with milk, and  
much the more reason for not

[illegible]

ly chance or their names are the single paragraph which ends failure. — MARYLYN DANCE.  
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ON MARIE ANTOINETTE.

Wise and Couldn't Get Partners  
at Her Own Ball.

Trailing impression regarding the  
days by Marie Antoinette in the  
days preceding and immediately  
after the meeting of the Estates Gen-  
eral from Mirabeau's assertion  
only man the king had about  
to queen?"

It is, says St. Armand in his new  
book, who knew nothing about  
Antoinette except from hearsay, ex-  
tending abilities, though much more  
her husband or the much more  
authority the Baron de Berse-  
ville. It is clear that Marie Antoinette

interference in political affairs. Her own history, and had read anything except novels. The motto began to take serious effect, and wearyness and the conversation. Her own talk was always admitting from one subject to another, the progress of the day, and of town and interested her more on questions about finance and politics. Understanding the object of the party such a person in matters of is no doubt that she had acted that she exercised, completely over her husband. In this interval has recorded that, "whether consciousness of her superiority, or fear or charm, or both, she never opposed her, but I have than a thousand times that when speaking his eyes and men exclaiming and engaged with the loved mistress seldom evokes." Her popularity increased rapidly.

[illegible]

to dance, among them Mr. de la Beaumont, a family which were overwhelmed with deeds of kindness, all of whom refused her, was impossible to make up the square dances. The indefensible those gentlemen about the meal seemed to me a sort of revolt. The subject was approaching—it broke at year."

Workingman as Home-Owner.  
Commercial Bulletin.

Workingmen in 1980 about 9,000,000 dwell-  
9,000,000 families. Say that there  
dwellings on farms than there  
are still that population did not  
own the half the dwellings, and  
these were owned by the wage-  
The rest of the families, about  
the number, must occupy the re-  
maining 9,000,000 dwellings, and any student  
project will be driven to the con-  
clusion that a considerable portion of the  
people own their own homes.

**Workingman as Home-Owner.**  
commercial Bulletin.  
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